

ABSTRACT

METHOD AND APPARATUS FOR CONTROLLED CONTRACTION OF COLLAGEN TISSUE

A method and apparatus for tightening a surface of a skin with an underlying collagen containing tissue applies radiant energy through the skin to underlying collagen tissue without substantially modifying melanocytes and other epithelial cells in the epidermis. A porous membrane is adapted to receive an electrolytic solution and become inflated to substantially conform a contacting exterior surface of the membrane to a skin layer. The membrane includes a cooling lumen for receiving cooling fluid. One or more thermal electrodes positioned in the membrane and transfers thermal energy to the electrolytic solution. The electrolytic solution and cooling fluid creates a reverse thermal gradient from the skin surface to the underlying collagen tissue. A thermal power source is coupled to the thermal electrodes, and a source of electrolytic solution is coupled to the membrane.